## WHAT IS CLAIMED IS:

method for treating a silicon substrate, comprising:

placing the silicon substrate into a sputtering equipment unit;

performing a sputtering step to simultaneously dry clean and amorphize the

silicon substrate surface by first using the sputtering equipment unit; and

depositing a titanium film on the silicon substrate by second using the sputtering

equipment unit.

2. The method of claim 1, wherein the titanium film is deposited at about 540°C.

3. The method of claim 1, wherein the sputtering equipment unit is an ionized

10 metal plasma (IMP) equipment unit.

4. Amethod for treating a silicon substrate having a surface, comprising:

providing a pre-processing chamber, wherein the pre-processing chamber has first and second power supplies for sputtering argon therein, wherein the first power supply

can provide the argon with a first bias, and the second power supply can provide the

silicon substrate with a second bias;

placing the silicon substrate into the pre-processing chamber;

providing the first bias to the argon;

providing the second bias to the silicon substrate; and

monifying the first bias and the second bias to sputter the argon to simultaneously

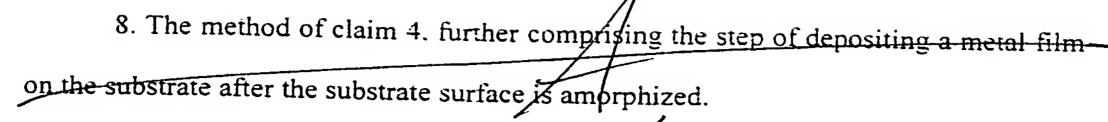
20 dry clean and amorphize the substrate surface.

5. The method of claim 4, wherein the first bias is about 250W to about 450W.

6. The method of claim 4, wherein the second bias is about 150W to about 300W.

7. The method of claim 4, wherein the pre-processing chamber is a chamber in an

ionized metal plasma (IMP) equipment unit.



- 9. The method of claim 8. wherein the metal film is deposited in the preprocessing chamber.
  - 10. The method of claim 8. wherein the metal film is made of titanium (Ti).
  - 11. The method of claim 3, wherein the metal film is made of cobalt (Co).
  - 12. The method of claim 10. wherein the metal film is deposited by TiCl<sub>1</sub>-based

CVD.